

## Article

# The reflective labyrinth: An innovative tool for exploring, developing and scaffolding reflection skills at UCLan

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## **Abstract**

Reflection is increasingly being embedded into higher education curricula, not only due to the benefits it has for long-term learning, but also due to it becoming a key requirement in professional competencies beyond the university context. However, due to assumptions that reflection is an innate ability already at students' disposal, the necessary scaffolding of the thought processes involved are often overlooked. This study therefore aimed to demonstrate how the use of a labyrinth could stimulate and deepen the learning and teaching of critical reflection skills within UCLan. Reporting on initial findings from five labyrinth workshops with staff and students, this paper identified that both groups appreciated the wellbeing effect the labyrinth afforded, but differed in their evaluation of the sessions' most valued quality. Whereas staff welcomed the opportunity, time and space to stop and reflect on their practice, students acknowledged the labyrinth's effectiveness for learning about reflection, its models and its application to their assessments and practice. Potentially signalling their differing familiarity with the processes and goals of reflection, this study concluded that the labyrinth is a useful scaffolding tool for the learning and teaching of reflection which can be used across different subject areas, year groups and levels of expertise.

*Keywords: Reflective practice, scaffolding, labyrinth.*

## **Title**

The reflective labyrinth: An innovative tool for exploring, developing and scaffolding reflection skills at UCLan

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## **Introduction**

Labyrinths are an ancient symbol dating back to 2000 BCE and are found across many different cultures (Saward 2003). Commonly associated with folklore, myths and legends, they have enjoyed a long existence; nevertheless interest in labyrinths has been growing over recent years. According to the Worldwide Labyrinth Locator

(2018), there are currently, as of 28 February 2018, 223 registered in the UK across a diverse range of institutions including prisons and hospitals but only seven of these exist in Higher Education Institutions (HEIs).

Labyrinths have a unicursal path, which means that unlike mazes, they have no dead ends or false turns. The person walking the labyrinth follows the path into the centre and returns by the same path. The labyrinth therefore provides a physical space for reflection and, if guided, offers participants the opportunity to contemplate a particular chosen issue. In Higher Education (HE) contexts, this could include issues related to study, and the assessment of the reflective skills stipulated by professional bodies for competency in practice.

The term 'reflective practice' derives from the work of Dewey (1910) and Schön (2016). Dewey (2009, p6) states that reflective practice refers to 'the active, persistent and careful consideration of any belief or supposed form of knowledge ...' and it can be aided by a number of models (see Gibbs 1988; John 1995; Kolb and Fry 1978). However, students sometimes fail to acknowledge the value of the reflective process and can be resistant to writing reflective assignments. With many university programmes including reflective assessments in their courses, this is therefore an area which many students need to develop in relation to their professional competencies.

In 2017, UCLan's Centre for Learning and Teaching (CELT) offered funding for small scale projects to foster innovation in learning and teaching. This seemed an ideal opportunity to collaborate on a project providing an intervention to support the development of students' reflective thinking skills. This labyrinth project therefore aimed to develop and enhance student engagement with the reflective process surrounding academic writing and/or professional skills. Using the grant to produce a labyrinth for use in workshops, the goal was to provide students and staff with the opportunity to experience the positive effects of walking on the creative thought process (Oppezzo and Schwartz 2014). With labyrinths also understood to increase brain activity (Sellers and Moss 2016), the project similarly endeavoured to demonstrate how their use could stimulate individual reflection and peer dialogue within modules as well as across wider university and professional contexts. The aim of this paper is to provide an account of the process of creating and introducing

the labyrinth to both staff and students at UCLan. In addition, it will consider its pedagogical underpinning and review the feedback on its initial implementation:

Objectives:

- 1) To outline key themes in the preliminary feedback obtained since September 2017 and report on the labyrinth project's initial findings.
- 2) To determine the extent to which the labyrinth project may or may not have supported reflective practice for both students and staff.

### **Literature review**

In underpinning the rationale for the labyrinth project, several lines of enquiry have been explored. For the purposes of this paper and in support of initial justification for the labyrinth project, underlying principles originated from three key areas: the values and problems attributed to reflective practice in HE, the additional benefits of reflective walking on wellbeing, and the concept of scaffolding as an important educational principle for assisting students with the processes and products of reflective thinking.

Vital in raising awareness and the monitoring of one's own values, performance or thinking processes (Brookfield 1987; Ostermann and Kottkamp 1993), reflection is defined as 'a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciation' (Boud, Keogh and Walker 1985, p3). It essentially deepens learners' critical thinking and encourages stronger and more conscious connections between practice and grounding theory (Dempsey, Halton and Murphy 2001; Palmer Burns and Bulman 1994; Ryan 2012). Similarly, with learning sometimes equated to making sense of reality (Brown, Bull and Pendlebury 1997), self-reflection can also generate a greater degree of ownership over learning which leads to more 'personally meaningful' outcomes for students (Bednar, Eglin and Welch 2007, p46). Beyond individuals, critical reflection is also embraced by professional bodies in a range of industries who have made it not only a key requirement for continual professional development, but who also value its potential to drive practice improvements via the challenging of previously unscrutinised assumptions (Brookfield 1987; Laverty 2012; Ryan 2012).

However, in acknowledging some of the benefits reflection offers, it is important to recognise the barriers that students and tutors alike can inadvertently create. Perhaps in conjunction with professional bodies compelling their workers to employ reflective practice, it is clear that motivation of an extrinsic nature could be counterproductive to learning. For instance, many HE practitioners complain of superficiality as well as the lack of critical thinking and theory-practice application in students' reflective work (Bednar, Eglin and Welch 2007; Lavery 2012) but with reflection often used as an assessment tool, it is unsurprising that students adopt strategies for 'how to pass' rather than 'how to learn' (Bednar, Eglin and Welch 2007, p47). Such a mentality, prompted by the quantifying of reflection into grades, inspires a weakened outlook on its true value: students consider it a short-term tool for passing assignments, rather than a long-term tool for learning (Owen and Stupans 2009). It can thus remain an 'alien' concept to HE students who consider it part of the writing rather than the thinking and learning process (Dalley-Hewer, Opie, and Knowles 2015; Dalley-Hewer and Opie 2016; Lavery 2012). Due to reflection 'Seldom [being] explored or explained as a phenomenon' (Desautel 2009, p2001), despite appearing in both classroom and professional contexts, the labyrinth project seeks to raise students' awareness of the processes behind reflective practice and the thinking about thinking (Tanner 2012) which can be a key indicator of greater academic success (Coutinho 2007), improved professional practice (Lavery 2012) and can ultimately make 'the formally unconscious, intangible or reflexive processes or events explicit' (Desautel 2009, p2001).

The benefits of physical activities including walking are widely acknowledged in research; this includes the benefits of walking for both physical and mental wellbeing. Physically, the World Health Organisation (WHO 2004; 2010) recommend that that adults aged 16-64 years of age should engage in 30 minutes of moderate exercise at least five times per week. Wen et al. (2011) state that moderate walking of 15 minutes a day increases life expectancy and studies such as that of Lee and Skerrett (2011) indicate the correlation between walking, improved health and a reduction in deaths from a range of causes. Walking is also associated with improved comprehension, memory, cognitive performance and the reduction in cognitive decline. For instance, physical exercise is linked with mood enhancement

(Rethorst, Wipfli and Landers 2009), which correlates with higher creativity (Baas, De Dreu and Nijstad 2008), contributes to improved divergent thinking (Chermahini and Homel 2012) and increases mental precision and clarity (Fredrickson 2004). Walking has also been shown to increase ideation both real time and shortly thereafter (Oppezzo and Schwartz 2014).

Mentally, exercise is widely acknowledged to help people suffering from depression (Donaghy 2007; Mental Health Foundation 2005) and improved mood accompanies a reduction in stress levels (Roe and Aspinall 2011). Since walking can have a calming effect which reduces stress (Yang 2004), and due to meditation being able to reduce anxiety and harmful behaviour (Dakwar and Levin 2009), research has thus demonstrated its physical and mental health benefits for prisoners (Zucker 2012), cancer patients, families and care-givers (Abdallah-Baran 2003; Nicholson 2002; Sandor and Froman 2006). However, according to Rhodes (2016), research into the use of labyrinths in university settings is still in its infancy. These are some of the initial pieces of research which attempt to present empirical research of what has only previously been reported anecdotally: Bright and Pokorny (2012) provide an overview of the benefits of contemplative practices in HE and mention the labyrinth as a potential tool; White and Stafford (2008) report their use of labyrinths to promote reflection in student nurses; Sellers (2009) discusses the use of labyrinths to promote reflection and creativity; and Walker (2011) recounts the journey to promote staff and student wellbeing through the use of the labyrinth. As labyrinths offer the potential to combine reflection with the physical, mental and emotional benefits of walking they offer an underexplored resource for staff and students of HEIs. They additionally offer mindful spaces which could be used to enhance staff and students' wellbeing.

The final strand offering justification for the labyrinth project expands on the student reflection problems identified earlier and how scaffolding can maximise learners' efforts to help them reap its benefits both in and outside the classroom. Though it was acknowledged that students can sometimes value reflection for its short-term gains, it must also be recognised that for many, reflective thinking is not an instinctive, innate ability (Coulson and Harvey 2013; Ryan 2012). In fact, reflection can inadvertently expose learners' limited confidence and life experiences at

undergraduate and postgraduate levels and can be seen as an overwhelming or daunting task by some (Coulson and Harvey 2013; Dempsey, Halton and Murphy 2001). However, these observations do little to impede assumptions made by some tutors that expect students to be able to fully and swiftly communicate their reflective learning and the understandings gained by it (Ryan 2012). It is to be expected, therefore, that students may perceive reflection to be a writing rather than a thinking skill (Dalley-Hewer, Opie, Knowles 2015), and that they may fail to fully appreciate the lifelong learning expertise it can offer (Dempsey, Halton and Murphy 2001; Owen and Stupans 2009). Universities ultimately have a key responsibility to aid students in their reflective development, whether that be before, during or after practical placements, or whether it be in preparation for the complex problem-solving encounters they will face (Owen and Stupans 2009; Ryan 2012; Xun and Land 2004). Scaffolding is one strategy for achieving this.

Scaffolding concerns the additional instruction or assistance that can help learners exploit their Zones of Proximal Development (ZPDs). Initially coined by Vygotsky (1978) to describe children's capacity for cognitive development based on their IQ scores, the ZPD denotes the potential learners have for extending their current knowledge or performance in a particular task when aided by a more capable peer or expert in contrast to working on their own (see Daniels 2001; Fani and Ghaemi 2011; Puntambekar and Hübscher 2005). An illustration relevant to this project may be a student's initial inability to reflect on a placement experience independently, compared to their improved ability to deconstruct and critically reflect on it with a tutor's questioning and guidance. In simple terms, scaffolding can accelerate learning potential which presently lies just beyond the learner's current capabilities (Owen and Stupans 2009). Not to be confused with being synonymous of all support (Puntambekar and Hübscher 2005), scaffolding specifically calls for varying degrees of instruction which allow the expert and novice to jointly construct meaning in a socially and culturally connected environment, simultaneously encouraging more ownership of students' learning. With reflective learning and development portrayed as a non-linear process (Coulson and Harvey 2013), the authors thus feel that introducing students to reflection via a labyrinth satisfies a range of scaffolding criteria in that the learner is guided through the metacognitive process of critical reflection by a more expert instructor; they are directed along the unicursal path with

prompts but it is they who interpret their meaning; and once the learner is more rehearsed in the methods and outcomes of successful reflection, it is an action they can repeat independently of tutors. Essentially, if emphasis is placed on the products of reflection without adequate scaffolding, HEIs run the risk of overlooking the fundamental processes underpinning and nurturing students' reflective development.

## **Methodology**

### **Labyrinth design and creation**

The teaching grant allowed the creation of a canvas labyrinth. Different designs were considered but it seemed appropriate to model the proposed labyrinth on the Santa Rosa pattern (see Fig.1), an adaptation of Chartres cathedral's archetypal design. The resulting labyrinth, instead of having eleven paths, was therefore created using a seven-circuit design due to size restrictions. The proportions of the canvas and path widths were taken from Labyrinth Enterprises (n.d.) and Buchanan (2007). The width of lines to create the paths were 2cm and the path of 30cm was created on a 6m<sup>2</sup> canvas. The radius of the centre circle is 65cm.



Figure 1: Santa Rosa labyrinth design (Goode-Harris, 2017)

Due to the size of the rooms available for classes in UCLan, it was not possible to make the design wheelchair accessible as a standard wheelchair width is 60.89cm, and would require a path width of no less than 81cm in order to freely manoeuvre (UCLan 2016). This would have resulted in a labyrinth which could not have been used within classrooms. Therefore, a canvas 6m<sup>2</sup> in area was chosen for the labyrinth to facilitate sessions and to aid room booking options across the university.



However, a wooden finger labyrinth matching the chosen design, was purchased from Rowan, a registered charity working with young adults with disabilities, to provide inclusive sessions for students with mobility challenges (see Fig. 2). These hand-held labyrinths and the design are in relief, which allows the path of the labyrinth to be traced with the finger. In addition, the wood used is reclaimed and recycled.



Figure 2: Wooden finger labyrinth

Upon selecting the design of the labyrinth path, colour was also a key consideration. The relationship between colour and emotion was therefore investigated to ensure relaxation and mindfulness were promoted. Kaya and Epps' (2004) research identified that green or blue were considered positive, calming and relaxing, and helped create a sense of peace. The latter was selected for the path outlines and the paints purchased were non-toxic.

Recommendations for the canvas weight and density were also important as the overall weight had to permit transportation of the canvas around the institution. The Health and Safety Executive (HSE 2017) guidance does not state specific weight regulations; there is no universally safe maximum weight for any particular person or load. Rather the HSE stresses an ergonomic approach to handling items in order to minimize risks. The weight, size, and shape of an item contribute to the risks involved in handling and moving it. Therefore, considerations to size and weight of labyrinth canvas (see Fig. 3) were necessary in order to minimize the degree of risk. The HSE's (2016) guideline figures for lifting and lowering were taken into consideration as the portability of the labyrinth was a key factor for its use around campus.



Figure 3: Completed canvas labyrinth

The design was first pencilled onto the canvas using a piece of wood pre-drilled with holes to ensure correct location of the labyrinth pathway lines. In order to do this the centre of the labyrinth was established and the placement of the entrance was decided. The painting tips offered on Labyrinth Enterprises' (n.d.) website provided confidence when starting the painting, such as the suggestion of placing the paint pots within an additional container to avoid spillage on the canvas. See Fig. 4 below for photographs of different stages of the design and painting process.



Figure 4: Labyrinth creation process

## Workshop outline

The walks were organised and guided by the lecturers who were gathering data concerning the suitability of labyrinths as a place and tool for reflection. Convenience sampling was used as this is the preliminary research following the introduction of the labyrinths at UCLan. A total of 17 staff and 23 students participated (see Table 1). This research includes five walks; the aim of which were to provide spaces for developing and scaffolding the practical thinking skills which underpin reflective practice. The purpose of the labyrinth walk was explained to those present. The participants were introduced to the history of the labyrinth and it was explained that walking slowly and meditatively, helps slows the heart and breathing rates (Murtagh, Murphy and Boone-Heinonen 2010) and the participants were encouraged to walk at their own pace. Relaxing music was played to create a suitable atmosphere and space for reflection and to avoid participants feeling uncomfortable with silence when walking in a group. Each labyrinth focused on a theme and these were expressed through creative elements placed on the corners (see Fig. 5). This aligns with Zundel's (2012, p111) statement that 'Provided with sufficient sensory stimuli, reflection can take on a more probing form, being more critical, creative or innovative affording the individual critical evaluation of the largely tacit, taken-for-granted assumption that underlie action and perception.' In this digital era images have a more prominent position and Stafford (2007) states that they can be used to shape new knowledge. Grushka and Donnelly (2010) also remark that images can be both interpretive and expressive inviting multiple analyses which can thereby encourage the 'personally meaningful' reflections so important to individuals' learning (Bednar, Eglin and Welch 2007, p46). The workshops also included pre- and post-walk discussions and activities since additional collaborative peer learning can be provided through oral reflection (Ryan 2012).

Table 1: Outline of sample

Group	Faculty/School/Subject area	Total participants per subject area	Total per group
Students	Policing	10	23
	Mental Health Nursing	7	
	Public Services	6	
Staff	Centre for Excellence in Learning and Teaching	9	17
	Faculty of Health and Wellbeing	7	

School of Forensic and Applied Sciences	1	
	TOTAL	40



Figure 5: Creative prompts for the corners

Finally, paper finger labyrinths and accompanying reflective handouts with photographs of prompts positioned at the corners were supplied to workshop participants. A supplementary leaflet containing general information about the history of the labyrinth was also provided.

### Feedback

Rhodes (2006) from The Labyrinth Society created a Labyrinth Walk Questionnaire in order to collect data in a non-intrusive way from labyrinth participants. This questionnaire asks participants to report on 10 variables: relaxation, anxiety, clarity, peacefulness, centeredness, stress, openness, quiet, agitation and reflectiveness. Participants are asked to respond to the above variables based on the stem statement 'Comparing how I felt before I walked the labyrinth with how I feel now, I feel...' (Rhodes 2016). Participants respond by selecting a number on a Likert scale. This questionnaire was adapted to provide a suitable instrument for collection of data within a UK HEI (see Appendix 1) but still comprised 10 variables describing

participants' learning experience of using the labyrinth. The five point Likert scale (Cohen, Manion and Morrison 2011) was used to characterise the level of agreement, ranging from: (1) much less, (2) less, (3) about the same, (4) more, (5) much more and (6) not applicable. A feedback questionnaire to establish satisfaction levels with the workshops was also utilised (see Appendix 2).

The self-report instrument, a questionnaire, takes approximately five minutes to complete; this ability to complete it within such a time frame avoids reliability issues associated with respondents' fatigue (Malhotra 2010). The questionnaires were completed and returned immediately during the workshops. It was also possible to maintain confidentiality to ensure a high response rate since no personal information was required; additionally a box was provided for participants to place their return.

### **Initial findings and discussion**

The first set of analyses examined the preliminary feedback gained from both staff and study participants of the labyrinth project. Utilising quantitative and qualitative elements from the feedback forms in Appendices 1 and 2, the key results summarising findings for objective 1 subsequently formed the basis for discussion of objective 2.

**Objective 1:** To outline key themes in the preliminary feedback obtained since September 2017 and report on the labyrinth project's initial findings.

Tables 2, 3 and 4 display comments made regarding the effectiveness of the overall labyrinth workshops. Following these, Tables 5, 6 and 7 present participant remarks relating to their previous labyrinth experience, the feelings evoked and other comments made. Though results will be discussed in more detail shortly, each table is accompanied by a set of bullet points summarising key observations from the data so far.

Table 2: How useful did you find the session?

Options	Students	% of total students	Staff	% of total staff	TOTAL	% of all responses
Not at all	0	0.00	0	0.00	0	0.00

Slightly	2	10.00	0	0.00	2	5.41
Moderately	7	35.00	3	17.65	10	27.03
Very	9	45.00	13	76.47	22	59.46
Extremely	2	10.00	1	5.88	3	8.10
TOTAL	20	100.00	17	100.00	37	100.00

Key observations:

- 55% of students said the labyrinth workshops were very or extremely useful
- 82% of staff said the labyrinth workshops were very or extremely useful

Table 3: What (if anything) did you like about the workshop?

Code	Example response	Students	Staff	Total
Space/Time/ Opportunity to reflect	<i>Good to have space and time to think.</i>	1	10	11
Corners/Prompts/ Structures aiding reflection	<i>Prompts in 4 corners, others highlighting different areas to think about.</i>	5	5	10
Learning about reflection/ reflective models	<i>I liked that it was based on reflection and the different forms.</i>	5	0	5
Teaching	<i>Enthusiasm of facilitators.</i>	2	3	5
Relaxing/Calm atmosphere	<i>Very calming.</i>	0	4	4
Discussion	<i>The opportunity to talk about/be questioned about project.</i>	4	0	4
New insights	<i>Made me think of things I haven't before about placement.</i>	4	0	4
Walking	<i>The meditative walk; the pacing, the undulations.</i>	2	2	4
The labyrinth itself	<i>The labyrinth is impressive.</i>	2	1	3
Collaboration opportunity	<i>Opportunity to work with the wider team.</i>	0	1	1
Related to course	<i>Personalised to the course the students were on.</i>	0	1	1
TOTAL NUMBER OF RESPONDENT COMMENTS		18	18	36

Key observations:

- For staff, the clear advantage provided by the labyrinth workshops was the opportunity, time and space to reflect; in answers provided by 18 different members of staff, this was mentioned on 10 occasions
- For students, no clear majority was identified but they appreciated the corners and prompts as an aid to reflection, the learning about reflection and its models, the discussion prompted by the walk and the new insights gained

- Both staff and students acknowledged the benefit of having prompts or visual aids in the corners to stimulate thought; this was remarked upon on 5 occasions by each group

Table 4: In what ways could it be improved?

Code	Example response	Students	Staff	Total
Practicalities, e.g. fewer people or more time to walk	<i>Maybe limit the number of people.</i>	1	5	6
Additions/Improvements to corners	<i>More women in the theorist corner.</i>	0	2	2
Information about the labyrinth/reflection prior to the session	<i>Information prior to session about what labyrinth is and how it works.</i>	2	0	2
Improvements to atmosphere	<i>Could be more atmospheric, dim lights, nice smells, etc. to enhance the senses.</i>	1	1	2
Mode of reflection, e.g. discussion, sitting vs. walking	<i>Permission to sit and mediate rather than walking.</i>	1	1	2
Unhelpful for reflection	<i>I like labyrinths and mazes as a design but don't find it particularly helpful for reflection.</i>	0	1	1
Confusing	<i>Last exercise took a bit to get my head around!</i>	0	1	1
Additional information about theory/reflective models	<i>More explorations of the theories and models available</i>	1	0	1
TOTAL NUMBER OF RESPONDENT COMMENTS		6	9	15

Key observations:

- Staff focused their suggestions on the practicalities of walking a labyrinth with fewer people or more time noted on 5 occasions in 9 responses
- Students seemed to struggle to identify improvements though two did acknowledge that they would have appreciated information about labyrinths or reflection being presented prior to the workshop

Table 5: Is this your first time walking a labyrinth?

	Students	%	STAFF	%	TOTAL	%
Yes	23	100.00	10	58.82	33	82.50
No	0	0.00	7	41.18	7	17.50
TOTAL	23	100.00	17	100.00	40	100.00

Key observations:

- Whereas 41% of staff had prior experience walking a labyrinth, all student participants had not

Table 6: Comparing how I felt before I walked the labyrinth with how I feel now, I feel:

Adjective	Students			Staff			All participants		
	Top answer	No.	%	Top answer	No.	%	Top answer	No.	%
Relaxed	More	13	56.52	More	6	35.29	More	19	47.50
Anxious	Less	8	34.87	About the same	7	41.18	About the same	14	35.00
Clear	More	9	39.13	About the same	11	64.71	About the same	20	50.00
Calm	More	11	47.83	More	7	41.18	More	18	45.00
Peaceful	More	10	43.48	More/ Much more	6	35.29	More	16	40.00
Balanced	More	11	47.83	About the same	7	41.18	More	17	42.50
Stressed	Less	11	47.83	About the same	6	35.29	Less	16	40.00
Open	About the same	11	47.83	About the same	10	58.82	About the same	21	52.50
Agitated	Less	7	30.43	Less	5	25.41	Less	12	30.00
Reflective	More	10	43.48	Much more	8	47.06	More	15	37.50

Key observations:

- Results varied across student and staff groups considerably
- Approximately half of students noted clear positive effects on their feelings of relaxation, calm, peace, balance, and stress
- Approximately half of staff indicated a clear positive effect relating to calm, but similar proportions noted little change in them being anxious, balanced, and open
- Whereas 43% of students felt more reflective, 47% of staff felt much more reflective

Table 7: Please write any other comments about the session below

Code	Example response	Students	Staff	Total
Atmosphere (positive)	<i>It was calming and relaxed.</i>	3	4	7
Learning about reflection/ reflective models	<i>Learning about reflective models.</i>	6	0	6
Opportunity/Time/	<i>I loved the time to think.</i>	0	5	5



Space to reflect				
Teaching/Effort in creating the workshop	<i>The attitude of the teachers was very good.</i>	3	2	5
Prompts/Corners/Visual aids	<i>I liked the 4 corners as it kept me focused.</i>	3	1	4
Style/Structure of reflection	<i>This is a personal style and clearly, the labyrinth works well for some.</i>	2	2	4
Atmosphere (negative)	<i>I would prefer to do it in a dimmer light.</i>	0	2	2
Not helpful for reflection	<i>Peace and walking would appear not to work for me. My 'reflective practice' is best with conversation/critical discussion.</i>	0	2	2
Free expression/Interaction	<i>Freedom of expression.</i>	1	1	2
Enjoyment	<i>Enjoyed all of it, thank you.</i>	0	1	1
Number of people	<i>I would prefer less people.</i>	0	1	1
Related to course	<i>Incorporated course into the lesson.</i>	1	0	1
Skills for work	<i>Skills which can help improve ways of dealing with work, e.g. targets.</i>	1	0	1
TOTAL NUMBER OF RESPONDENT COMMENTS		16	10	26

- Once again, staff highlighted the benefits of being provided with time, space and the opportunity to reflect; of 10 responses, this was outlined on 5 occasions
- Students instead commented on the labyrinth allowing them to learn about reflection and reflective models; this was mentioned in approximately a third of all responses
- Both students and staff acknowledged the positive atmospheric qualities afforded by the labyrinth. Comments about being relaxed, calm and enjoying the music seemed worth highlighting for seven participants

**Objective 2:** To determine the extent to which the labyrinth project may or may not have supported reflective practice for both students and staff.

Though several avenues for further examination were exposed in Outcome 1's outline of the data, discussion here will focus on three key themes: namely participants' feeling of being relaxed, stressed and, of course, reflective.

Table 6 initially revealed that 57% of students and 35% of staff felt more relaxed following their labyrinth walk. When figures were combined, the data actually indicated that 74% and 65% of students and staff, respectively, felt either more or

much more relaxed. Such clear majorities would not only echo the benefits for mood enhancement noted by Rethorst, Wipfli and Landers (2009), but they would also imply that secondary effects for reflective practice such as heightened creativity and cognitive performance were also stimulated by the labyrinth workshops. Despite qualitative analyses first suggesting that a relaxing atmosphere was appreciated only by staff, it is evidently a quality that some learners enjoyed in the classroom also (see Table 7). With nearly half of staff and students commenting that they felt calmer, additional positive support is offered to Rhodes' (2011) research into the experiences of those walking labyrinths and the potential gains they may have for general wellbeing, a sentiment reaffirmed by the following staff member's appraisal:

Extract 1: (What did you like, if anything, about the workshop) The meditative walk; the pacing, the undulations, the mindfulness of it that enables me to reflect on my 'difficult' learning journey.

Developing from the previous theme, it is important to attend to the levels of stress felt by labyrinth workshop participants. Whilst 61% of students and 71% of staff indicated they were more peaceful following the walks, less than half – 48% of students and 29% of staff – said their stress had reduced. It is at this point that a potential distinction regarding labyrinths and their influences on reflective practice emerges between the two groups. Whereas staff mostly remarked on taking advantage of the opportunity, space and time to reflect (see Tables 3 and 7), students instead reported on the labyrinth's impact for their learning or reflective development:

Extract 2: The session was good as I am a practical learner and the practical aspect taught me a lot more about reflection.

Extract 3: I liked the discussions on how the labyrinth can help you reflect on how it fits with academic work.

Extract 4: Skills which can help improve ways of dealing with work, e.g. targets.

In terms of stress, therefore, it would seem that tutors recognise the need to take time out from their busy schedules to process their thoughts and possibly escape the day-to-day pressures of work but stress for students may directly link to clarification of reflection and the expectations it generates for assignments, course completion and practice development. The fact that clarity following the walk improved for nearly twice as many students as it did staff (more and much more clear = 52% of students, 24% of staff) further supports the suggestion that the labyrinth strengthened students' understanding of the goals and processes of reflection, thus reducing the stress felt.

The final theme centres on students and staff feeling more reflective and the implications for the labyrinth as a useful scaffolding tool. Staff appeared to reap the reflective benefits more than students; 61% of students said the walk made them more or much more reflective as opposed to 76% of staff. With 55% of students and 82% of staff evaluating the overall workshop as very or extremely useful (see Table 2), the initial assumption to be made is that staff benefit more from such sessions. However, this is arguably not entirely the case. The staff participants came from subject areas typically well-informed of reflection as a developmental tool; the student participants conversely were being introduced to it for the first time. Combined with the fact that 40% of staff had already encountered a labyrinth whereas no students had, not only did the students have to face two unknowns simultaneously, but the data could also provide more tangible evidence of the different ability levels. Puntambekar and Hübscher (2005) indicate that as the proficiency in a learning activity develops, the degree of scaffolding should reduce until it is eventually withdrawn. Staff, therefore, may have deemed the session more useful due to the fact they simply needed appropriate time and space to reflect. The students, on the other hand, though clearer in the aims and practices of reflection, were at a much more novice position in their reflective development. The labyrinth, not only for more experienced reflective thinkers, could be an equally useful tool in the initial stages when students are taking their first steps towards becoming more adept reflective learners and practitioners.

## **Conclusion**

This paper aimed to outline initial findings of the labyrinth project and its preliminary effectiveness in supporting the reflective practice of students and staff. As an innovative tool for exploring and developing reflection skills in work, it was found that for staff, labyrinths provided vital, appreciated time out of busy teaching schedules to reflect on and process thoughts. For students, new or less familiar with the purposes and processes of reflection, they performed a valuable scaffolding role which made the goals of reflection clearer through deconstructing their thinking, behaviour and actions. Similarly, with the use of tailored imagery and prompts as stimuli in the labyrinth corners, learners could employ individual interpretation of the themes presented, thus taking more ownership of their learning and reflective walks. This was found particularly useful for those using reflection prior to, during and following their professional work placements. With the walks not only offering benefits for mindfulness and wellbeing for both groups, there is initial support for encouraging the use of labyrinths to promote novel, creative and in-depth reflective techniques for the wider UCLan community. Labyrinths could also stimulate the progression of learners from novice participants requiring the support of a more expert guide to independent, critical and confident reflectors.

Due to the exploratory nature of this study, limitations should also be taken into account. The research could be strengthened with additional data from a broader range of subject areas and a wider cohort of students and staff. This could diversify the data obtained and allow findings to be generalised more widely. It is equally important to acknowledge the reactions staff and student participants may have to encountering the labyrinth for the first time. The initial data indicated that staff may have prior experience and therefore familiarity with labyrinths, whereas students could be encountering them for the first time. Not only may the concept of reflection be new to this group, but so too could the teaching instrument. The full implications of this observation for learning and teaching would benefit from further investigation.

Future development of the project could take two different forms. Firstly, the use of labyrinths in different discipline areas would be an interesting avenue to explore and could result in a growing number of applications. Doing so would i) offer the opportunity to broaden staff collaboration and dialogue across the UCLan community, and ii) instil a need to scaffold skills for learning which are sometimes

wrongly assumed to be innate. Secondly, research could be conducted into the potential impact of facilitating labyrinth workshops as an aid to staff and student wellbeing or it could investigate the relationship between scaffolding of learning in the short-term and its implications for quantitative measures of student attainment in the long-term.

## References

- Abdallah-Baran, R. (2003). 'Nurturing spirit through complementary cancer care', *Clinical Journal of Oncology Nursing* 7, 468-70.
- Baas, M., De Dreu, C. K. W. and Nijstad, B. A. (2008). 'A meta-analysis of 25 years of mood-creativity research: Hedonic tone, activation, or regulatory focus?' *Psychological Bulletin* 134, 779-806.
- Bednar, P., Eglin, R. and Welch, C. (2007). 'Contextual inquiry: A systematic support for student engagement through reflection', *Interdisciplinary Journal of Knowledge and Learning Objective* 3, 45-55.
- Boud, D., Keogh, R. and Walker, D. (1985). *Reflection: Turning Experience into Learning*. London: Kogan Page.
- Bright, J. and Pokorny, H. (2012). 'Contemplative practices in higher education: Breathing heart and mindfulness into the staff and student experience', *Educational Development* 13 (4), 22-25.
- Brookfield, S. D. (1987). *Developing Critical Thinkers: Challenging Adults to Explore Alternative Ways of Thinking and Acting*. Buckingham: Open University Press.
- Brown, G., Bull, J. and Pendlebury, M. (1997). *Assessing Student Learning in Higher Education*. London: Routledge.
- Buchanan, J. (2007). *Labyrinths for the Spirit: How to Create Your Own Labyrinths for Meditation and Enlightenment*. London: Gaia Books.
- Chermahini, S. A. and Homel, B. (2012). 'Creative mood swings: Divergent thinking affects mood in opposite ways', *Psychological Research* 76, 634-640.
- Cohen, S., Manion, L. and Morrison, K. (2011). *Research Methods in Education*. Abingdon: Routledge.

Coulson, D. and Harvey, M. (2013). 'Scaffolding student reflection for experience-based learning: A framework', *Teaching in Higher Education* 18 (4), 401-413.

Coutinho, S. A. (2007). 'The relationship between goals, metacognition, and academic success', *Educate* 7 (1), 38-47.

Dakwar, E. and Levin, F. (2009). 'The emerging role of meditation in addressing psychiatric illness, with a focus on substance use disorders', *Harvard Review of Psychiatry* 17, 254-267.

Dalley-Hewer, J. and Opie, J. (2016). 'Introducing reflection to health care students: Curriculum development and the labyrinth' in J. Sellers and B. Moss, eds. *Learning with the Labyrinth: Creating Reflective Spaces in Higher Education*. London: Palgrave, 86-93.

Dalley-Hewer, J., Opie, J. and Knowles, N. (2015). 'A creative alternative to reflective writing: Promoting skills of reflection through walking a labyrinth', *Physiotherapy* 101 (1), e766-e767.

Daniels, H. (2001). *Vygotsky and Pedagogy*. London: Routledge Falmer.

Dempsey, M., Halton, C. and Murphy, M. (2001). 'Reflective learning in social work education: Scaffolding the process', *Social Work Education* 20 (6), 631-641.

Desautel, D. (2009). 'Becoming a thinking thinker: Metacognition, self-reflection, and classroom practice', *Teachers College Record* 111 (8), 1997-2020.

Dewey, J. (1910). *How We Think*. Available at:  
<[URL:http://rci.rutgers.edu/~tripmcc/phil/dewey-hwt-pt1-selections.pdf](http://rci.rutgers.edu/~tripmcc/phil/dewey-hwt-pt1-selections.pdf)> [Accessed 28 January 2018]

Dewey, J. (2009). *Democracy and Education: An Introduction to the Philosophy of Education*. New York: Feather Trail Press.

Donaghy, M. (2007). 'Exercise and seriously improve your mental health: Fact or fiction?' *Advances in Physiotherapy* 9 (2), 76-89.

Fani, T. and Ghaemi, F. (2011). 'Implications of Vygotsky's Zone of Proximal Development (ZPD) in teacher education: ZPTD and self-scaffolding', *Procedia – Social and Behavioral Sciences* 29, 1549-1554.

Fredrickson, B. L. (2004). 'The broaden-and-build theory of positive emotions', *Philosophical Transactions of the Royal Society* 359, 1367-1377.

Gibbs, G. (1988). *Learning by Doing: A Guide to Teaching and Learning Methods*. Oxford: Oxford Polytechnic.

Goode-Harris, L. (2017). *The Santa Rosa Labyrinth*. Available at: <URL:<http://leagoodeharris.com/santa-rosa-labyrinth/>> [Accessed 02 March 2018]

Grushka, K., and Donnelly, D. (2010). 'Digital technologies and performative pedagogies: Repositioning the visual', *Digital Culture and Education* 2 (1), 83-102.

Health and Safety Executive (2016). *Manual Handling: Manual Handling Operations Regulations 1992*. Available at: <URL:<http://www.hse.gov.uk/pubns/priced/l23.pdf>> [Accessed 26 January 2018]

Health and Safety Executive. (2017). *FAQs - Manual Handling and Labelling Loads*. Available at: <URL:<http://www.hse.gov.uk/msd/faq-manhand.htm>> [Accessed 28 January 2018]

John, C. (1995). 'The value of reflective practice for nursing', *Journal of Clinical Nursing* 4 (1), 23-30.

Kaya, N., and Epps, H. H. (2004). 'Relationship between colour and emotion: A study of college students', *College Students Journal* 38 (3), 396-405.



Kolb, D. A. and Fry, R. (1978). 'Towards and applied theory of experiential learning' in G. Cooper, ed. *Theories of Group Processes*. New York: Wiley, 79-92.

Labyrinth Enterprises (n.d.). *Painting Canvas Labyrinths*. Available at: <URL:<http://labyrinth-enterprises.com/paintinstructions.html>> [Accessed 26 January 2018]

Laverty, J. (2012). 'Reflective learning within clinical physiology: The student's perspective on the usefulness of reflection as a learning tool', *Reflective Practice* 13 (1), 131-147.

Lee, I. M. and Skerrett, P. J. (2011). 'Physical activity and all-cause mortality: What is the dose-response relation?', *Medicine in Sports and Exercise* 33, S459-471. Available at: <URL:<https://doi.org/10.3945/ajcn.114.100065>> [Accessed 25 March 2018]

Malhotra, N. K. (2010). *Marketing Research: An Applied Orientation*. Englewood Cliffs: Pearson Education.

Mental Health Foundation (2005). *Exercise and Depression: Exercise Referral and the Treatment of Mild or Moderate Depression Information for GPs and Health Care Professionals*. Available at: <URL:[http://lx.iriss.org.uk/sites/default/files/resources/exercise\\_depression\\_booklet\\_gp.pdf](http://lx.iriss.org.uk/sites/default/files/resources/exercise_depression_booklet_gp.pdf)> [Accessed 26 January 2018]

Murtagh, E. M., Murphy, M. H. and Boone-Heinonen, J. (2010). 'Walking – The first step to cardiovascular disease prevention', *Current Opinion in Cardiology* 25 (5), 490-496.

Nicholson, M. (2002). 'Ask an expert: Constructing labyrinths of patients with cancer', *Clinical Journal of Oncology Nursing* 6, 296-297.

Oppezzo, M. and Schwartz, D. (2014). 'Give your ideas some legs: The positive effect of walking on creative thinking', *Journal of Experimental Psychology: Learning, Memory and Cognition* 40 (4), 1142-1152.

Ostermann, K. F. and Kottkamp, R. (1993). *Reflective Practice for Educators: Improving Schooling through Professional Development*. Newbury Park: Corwin Press.

Owen, S. M. and Stupans, I. (2009). 'Experiential placements and scaffolding for reflection', *Learning in Health and Social Care* 8 (4), 272-281.

Palmer, A. M., Burns, S. and Bulman, C. (1994). *Reflective Practice in Nursing: The Growth of the Professional Practitioner*. Oxford: Blackwell.

Puntambekar, S. and Hübscher, R. (2005). 'Tools for scaffolding students in a complex learning environment: What have we gained and what have we missed?', *Educational Psychologist* 40 (1), 1-12.

Rethorst, C. D., Wipfli, B. M. and Landers, D. M. (2009). 'The anti-depressive effects of exercise', *Sports Medicine* 39, 491-511.

Rhodes, J. W. (2006). *The Labyrinth Walk Questionnaire and Instructions*. Available at: <URL:<https://zdi1.zd-cms.com/cms/res/files/382/LabyrinthWalkQuestionnaireandInstructions.pdf>> [Accessed 14 January 2018]

Rhodes, J. W. (2011). *Labyrinth Walk Questionnaire: Composite of all Events, September 2005 through March 2011*. Available at: <URL:<https://zdi1.zd-cms.com/cms/res/files/382/Labyrinth-Walk-Questionnaire-Data-Composite-thru-3-2011.pdf>> [Accessed 24 February 2018]

Rhodes, J. W. (2016). 'Research and the labyrinth in Higher Education' in J. Sellers and B. Moss, eds. *Learning with the Labyrinth: Creating Reflective Spaces in Higher Education*. London: Palgrave, 72-85.

Roe, J. and Aspinall, P. (2011). 'The restorative benefits of walking in urban and rural settings in adults with good and poor mental health', *Health and Place* 17, 103-113.

Rowan (2017). *Creating Art Improving Lives*. Available at: <URL:<http://www.rowanhumberstone.co.uk/artwork/finger-labyrinths/>> [Accessed 14 January 2018]

Ryan, M. (2012). 'Conceptualising and teaching discursive and performative reflection in higher education', *Studies in Continuing Education* 34 (2), 207-223.

Sandor, M. K. and Froman, R. D. (2006). 'Exploring the effects of walking the labyrinth', *Journal of Holistic Nursing* 24 (2), 103-110.

Saward, J. (2003). *Labyrinth and Mazes: The Definitive Guide to Ancient and Modern Traditions*. London: Gaia.

Schön, D. A. (2016). *Reflective Practitioner: How Professionals Think in Action*. Available at: <URL:<https://ebookcentral.proquest.com/lib/uclan-ebooks/reader.action?docID=4816972&query>> [Accessed 23 February 2018]

Sellers, J. (2009). 'Exploring the labyrinth', *Educational Development* 10 (1), 15-16.

Sellers, J. and Moss, B. (2016). *Learning with the Labyrinth: Creating Reflective Space in Higher Education*. London: Palgrave.

Stafford, B. (2007). *Echo Objects: The Cognitive Work of Images*. Chicago: University of Chicago Press.

Tanner, K. D. (2012). 'Promoting student metacognition', *CBE – Life Sciences Education* 11, 113-120.

UCLan (2016). *Risk Assessment for Activities Involving Disabled Staff and Students*.

Available at:

<URL:[https://intranet.uclan.ac.uk/ou/fm/\\_layouts/15/WopiFrame.aspx?sourcedoc=/ou/fm/Documents/FM%20SHE%20014%20RA%20for%20disabled%20staff%20and%20students%20rev%203.docx&action=default&DefaultItemOpen=1](https://intranet.uclan.ac.uk/ou/fm/_layouts/15/WopiFrame.aspx?sourcedoc=/ou/fm/Documents/FM%20SHE%20014%20RA%20for%20disabled%20staff%20and%20students%20rev%203.docx&action=default&DefaultItemOpen=1)> [Accessed 02 March 2018]

Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge: Harvard University Press.

Walker, H. (2011). 'Creating a labyrinth: A personal and professional journey', *Association for University and College Counselling Journal*, 20-23.

Wen, C. P., Pui, J., Wai, M., Tsai, M. K., Yang, Y. C., Cheng, T. Y. D... Wu, X. (2011). 'Minimum amount of physical activity for reduced mortality and extended life expectancy: A prospective cohort study', *The Lancet* 378, 1244-1253.

White, M. J. and Stafford, L. (2008). 'Promoting reflection through the labyrinth walk', *Nurse Educator* 33 (3), 99-100.

World Health Organisation (2004). *Global Strategy on Diet, Physical Activity and Health*. Available at:

<URL:[http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy\\_english\\_web.pdf](http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf)> [Accessed 14 January 2018]

World Health Organisation (2010). *Global Recommendations on Physical Activity for Health*. Available at:

<URL:[http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979_eng.pdf)> [Accessed 14 January 2018]

Worldwide Labyrinth Locator (2018) *Welcome to the World-Wide Labyrinth Locator!*

Available at: <URL:<http://labyrinthlocator.com>> [Accessed 28 February 2018]

Xun, G. E. and Land, S. M. (2004). 'A conceptual framework for scaffolding ill-structured problem-solving processes using question prompts and peer interactions', *ETR&D* 52 (2), 5-22.

Yang, A. C. (2004). 'Walking the labyrinth: A tool of stress reduction for nurses', *Journal of Gynecologic Oncology Nursing* 13 (3), 18-22.

Zucker, D. M. (2012). 'Labyrinth walking in correction', *Journal of Addiction Nursing* 23, 47-54.

Zundel, M. (2012). 'Walking to learn: Re-thinking reflection for management learning', *Management Learning* 44, 109-126.

## Appendix 1



1) Is this your first time walking a labyrinth?

YES  NO

2) Comparing how I felt before I walked the labyrinth with how I feel now, I feel:

	Much less	Less	About the same	More	Much more	Not applicable
a) Relaxed	1	2	3	4	5	0
b) Anxious	1	2	3	4	5	0
c) Clear	1	2	3	4	5	0
d) Calm	1	2	3	4	5	0
e) Peaceful	1	2	3	4	5	0
f) Balanced	1	2	3	4	5	0
g) Stressed	1	2	3	4	5	0
h) Open	1	2	3	4	5	0
i) Agitated	1	2	3	4	5	0
j) Reflective	1	2	3	4	5	0

3) If there are any words describing how you feel that are not listed above, please write them below:

	Much less	Less	About the same	More	Much more	Not applicable
a)	1	2	3	4	5	0
b)	1	2	3	4	5	0
c)	1	2	3	4	5	0

4) Please write any other comments about the session below:

(Adapted from Rhodes 2016)

## Appendix 2



### WISER labyrinth workshop

Title:

Date:

1) How useful did you find this workshop?

Not at all	Slightly	Moderately	Very	Extremely

2) What (if anything) did you like about the workshop?

3) In what ways could it be improved?

4) Would you be interested in taking part in research conducted by WISER into the use of labyrinths at university?

Yes  No  Possibly

If 'yes' or 'possibly', please give name and UCLan email

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